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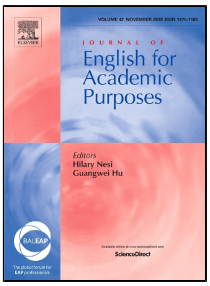

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1 Introduction

Students writing in the academy face a number of complex challenges in negotiating disciplinary and genre conventions. One of the most abstract of these is a consideration of reader expectations (Thompson 2001) in a context where they are writing for a higher status reader. In Levinson's (1979: 370) terms, students need to understand the 'constraints on what will count as allowable contributions', the abstract rules of the language game in which they are involved. These may be obscure to those who are new to university, particularly if they are second language writers, yet are very important. It is therefore interesting to examine the ways that proficient student writers negotiate such challenges and consider the implications for EAP students and practitioners.

One area of importance in this regard is the expression of obligation, also known as deontic modality (Halliday and Matthiessen, 2004). As Hyland (2002: 236) argues, 'the ways academic writers use directives are intimately related to their assessments of appropriate reader-relationships'. But this is an under-researched area, particularly in student writing. This may be due to a belief that imposing an obligation poses a threat to negative face (Brown and Levinson, 1987) and thus its expression in academic prose is generally inappropriate (Giltrow 2005). There is general agreement that imposing an obligation on an audience is a risky strategy (Swales et al., 1998; Hyland, 2002; Neiderhiser et al., 2016).

Nevertheless, studies which have been carried out in this area (Swales et al. 1998; Hyland, 2002; Giltrow, 2005; Lee, 2010; Lewis, 2015; Neiderhiser et al., 2016) have indicated that the expression of obligation is relatively widespread. Of these studies, only Hyland (2002), Neiderhiser et al. (2016) and Lee (2010) have focused on student writing. Hyland's corpus-based study aimed to compare three different corpora; his corpus of student writing was composed of L2 English research reports written in Hong Kong. Hyland (2002: 222) found that these students were far more reluctant to impose obligations on their readers than writers of textbooks and research articles, since this involved 'claiming an authority which [they] ... did not wish to display'. Neiderhiser et al. (2016) investigated the use of imperatives in the Michigan Corpus of Upper-level Student Papers (MICUSP) focusing on the 5 disciplines where they were found to be more frequent (physics, philosophy, economics, mechanical engineering and linguistics). Their findings suggest that common uses of imperatives are to draw attention to important points and to refer to other parts of their texts. They also noted that the use of imperatives varied considerably by discipline in line with published work. However, they did not investigate other means of achieving similar functions, such as modal verbs *must* and *should*. Lee (2010), meanwhile, carried out a close textual analysis of 12 essays by undergraduate writers, finding that those receiving higher grades showed a more nuanced and generally cautious use of commands.

Previous work in this area, therefore, has investigated how student writers manage the potentially risky act of imposing an obligation, indicating the importance of this risk management in student writing. However, this research has been limited in various ways, providing only a restricted view of how

obligation is realised in undergraduate writing. This study seeks to complement earlier work by investigating the expression of obligation by a range of exponents in a corpus of successful student academic writing, the British Academic Written English corpus (BAWE).

2 Approaches to the investigation of obligation in academic writing

The terminology used for referring to obligation and associated concepts is quite varied (Depraetere & Reed, 2006; Gabrielatos, 2010) and so requires some clarification. Some definitions of obligation (or deontic modality) refer to the moral or social necessity of some 'act' being carried out (Lyons, 1977; Hoye, 1997). However, it is preferable to define it as the desirability of a particular state of affairs (SoA) being actualised (Huddleston & Pullum, 2002; Nuyts, 2005; Depraetere & Reed, 2006; Gabrielatos, 2010), since it is not always an action that is referred to.

The Hallidayan term 'obligation', also used by Lewis (2015) is employed in this study rather than alternatives such as 'deontic modality' (e.g. Giltrow, 2005), 'root modality' (Coates, 1983), or 'directive' (Hyland, 2002), all of which refer to very similar phenomena. There are several reasons for this. Firstly, as pointed out by Gabrielatos (2010), use of the term 'deontic' modality suggests advocacy of the highly problematic distinction between this and 'dynamic' modality (Perkins, 1983; Palmer, 1990; Huddleston & Pullum, 2002). The term 'directive', referring to the speech act but also included as a subcategory of interactions, is also problematic since it implies that it is possible to reliably distinguish between 'performative' and 'non-performative' (Palmer 1990) uses of the forms that are of interest here. This distinction is a central issue in the

modality literature, but one which Lyons (1977), Halliday & Matthiessen (2004) and Gabrielatos (2010) argue is unresolvable and which caused Neiderhiser et al. (2016) to abandon their attempted replication of Hyland (2002). The term obligation, in contrast, has the advantage of being semantically transparent and allows straightforward contrasts with related functional terms such as prohibition and permission. Consequently, in this study the term obligation will be used to refer to a speaker or writer's judgement of the desirability of a state of affairs [1].

An important issue with regard to the expression of obligation, whether generally in English or more specifically in academic prose, relates to the forms which are to be included (Lewis, 2015) and what meanings they may index. For Halliday & Matthiessen (2004: 147), modality only relates to 'arguable' proposals, that is, where the means of expression allows for disagreement, 'the region of uncertainty that lies between "yes" and "no"'. Since imperatives are not 'arguable', this definition of obligation excludes imperatives from the scope of modal obligation. We have seen above that other studies have been carried out into the use of imperatives in student writing. Exploring this 'region of uncertainty' expressed by other forms can help reveal more about how students manage risk in expressing obligations.

The Hallidayan framework for the expression of obligation is presented in Table 1 with examples of the main forms and exponents for each of the four different 'orientations': 'subjective explicit', 'subjective implicit', 'objective implicit' and 'objective explicit'. An expression of obligation is 'subjective' when

[1] Readers interested in a more detailed treatments of issues related to this area of modal meaning are referred to Gabrielatos (2010) and Author (2015).

the speaker takes responsibility for the judgement that the SoA is necessary and 'objective' when this judgement is presented as deriving from another source. A further distinction is then made between 'implicit' and 'explicit' expressions. 'Implicit' expressions are integrated into the verb phrase, as with modal verbs and semi-modals *have to* and *need to*, the point being that this is implicitly the writer's judgement. 'Explicit' expressions are those where the obligation is expressed by means of a projection and the purported source of the obligation is therefore explicitly identified (Halliday & Matthiessen, 2004). In this way, proceeding from 'subjective explicit' to 'objective explicit' across the framework as set out in Table 1, a writer is interpreted as taking progressively less responsibility for the judgement of necessity. *I want John to go* is 'subjective explicit' because the use of the first person subject makes it clear that the speaker is taking responsibility for obliging John to carry out the action. In contrast, the use of a modal or semi-modal, as exemplified in *John should go* is analysed as implicitly endorsing the obligation for 'John to go' without directly saying who is responsible for this obligation; this is 'subjective implicit'.

Those familiar with the framework will note the adaptation made here regarding the form exemplifying the 'objective explicit' orientation of obligation. Halliday & Matthiessen (2004) include *it is expected that* but, based on analysis of examples from the British Academic Written English (BAWE) corpus, this expression is far more likely to express probability than obligation. For this reason, it has been replaced by *it is important to*, an expression that is closely associated with the expression of obligation meanings in academic prose (Hyland, 2002).

A further aspect of note in Table 1 is that a range of exponents are available for each orientation. A change of exponent, for example from *should* to *must*, can indicate a change in the modal 'value' expressed (Halliday & Matthiessen 2004). This indexes the strength of the obligation. The exponents in the examples shown in Table 1 represent options expressing 'median' value obligation; Halliday's model also allows for 'high' and 'low' values. The first exponents listed in the row below represent high value options for obligation[2].

The significance of Halliday & Matthiessen's (2004) four-way categorisation of the orientations of obligation is that it indicates lexico-grammatical means for varying the responsibility taken for the judgement of obligation. The possibility of avoiding responsibility for the imposition of an obligation by using *it is important to* rather than, for example, 'you must', is of particular importance in academic prose, where such an imposition may be a risky move. Thus the choice amongst the forms presented in Table 1 may have pragmatic implications (Lee, 2010; van Linden & Verstraete, 2011).

A complementary perspective is provided by Hyland's (2002) work on directives in research articles, textbooks and student reports, which yielded the functional framework presented in Table 2. Hyland proposes three main categories of actions that an addressee may be requested to carry out: *textual acts*, which 'refer [a reader] to another part of the text or to another text'; *physical acts*, which direct readers to perform a research-focused or real world action; and *cognitive acts*, such as following a new argument or line of reasoning or paying attention to a particular point (Hyland 2002: 217). Hyland points out

[2] This study does not focus on 'low' value exponents of obligation since, as Gabrielatos (2010) points out, they refer to permission, which, as 'deontic possibility', has traditionally been considered distinct from obligation ('deontic necessity').

that such acts may be 'hypothetical' in that readers may not actually carry them out, as in the case of the 'research focus' example in Table 2. Each of the categories is sub-divided into two or three sub-categories to indicate finer distinctions. Hyland proposes that the level of imposition on the reader increases as one moves from *textual acts* to *cognitive acts*. According to this argument, referring a reader to a specific section of an article (a *textual act*) is less threatening to the reader's negative face, and thus carries less risk than an instruction to maintain the temperature at a certain level (a *physical act*). The riskiest acts involve drawing a reader's attention to a particular idea or asking them to follow a particular line of argument (*cognitive acts*).

The association Hyland (2002) makes between the type of act a reader is directed to perform and the level of imposition upon them is of interest. This is because it offers a way of investigating the extent to which proficient student writers show awareness of risk they are taking in terms of the language they use. If, as Halliday's framework proposes, one can avoid personal commitment to an obligation by altering the orientation (form) one uses, it seems likely that the orientation chosen will interact with the level of imposition the writer sees as applying; 'riskier' cognitive acts may be worded in terms that allow the writer to avoid taking responsibility. The interaction between form and function is not an avenue that Hyland (2002) explores in depth, as his study interests itself in the ways act types vary with genre and discipline. However, he does discuss the importance of impersonal means of expression as a way of mitigating the risk inherent in obliging a reader to carry out an act. He notes the prevalence of impersonal means of avoiding reference to the reader, such as passive constructions and 'adjectival predicates with *necessary/important/essential* etc.'

(Hyland 2002: 217), which are elsewhere referred to as 'introductory *it*' expressions (Francis, Hunston & Manning, 1998; Hewings & Hewings, 2000; Groom, 2005). This strategy of using impersonal constructions is one that Hyland (2002) finds to be employed commonly in L2 student research reports. However, it is discussed in terms of realisations in specific genres rather than interaction with function. Lee (2010) also mentions similar means of 'depersonalising' a command to achieve a 'formal tone' and thereby showing suitable respect to a higher status reader.

Combining the insights of the Hallidayan and Hylandian approaches, we would expect, then, proficient student writers to make use of forms which take less responsibility for more risky functions, that is, those where the imposition on the reader may be greater. But we might also, based on Hyland (2002) and Lee (2010) expect to see other strategies for mitigating potential risk.

The questions this study aims to address are therefore as follows:

1. Which forms suggested by Halliday and Matthiessen's framework are frequent enough in proficient student writing to be worth investigating further?
2. Is there a tendency in student writing for lower responsibility forms to be preferred for higher risk functions?
3. What other ways do student writers use these forms and how do they reflect the levels of potential risk inherent in different functions of obligation?

3 Methods

3.1 Corpus choice

As the aim of this study was to investigate the use of expressions of obligation in proficient student writing, it was necessary to select an appropriate corpus. Two major corpora exist of successful university assignments, the British Academic Written English (BAWE) corpus, and the Michigan Corpus of Upper-Level Student Papers (MICUSP); BAWE assignments achieved a grade of at least 60%, while MICUSP contains A-graded papers. Both of these corpora cover a range of genres and disciplines, as shown in Table 3.

However, the two corpora are not equally accessible. While the BAWE corpus is freely accessible both via download and also through the Sketch Engine interface, MICUSP is currently only available through its online interface[3]. Since this interface is designed for accessibility and ease of use for students and teachers (Römer 2012), more complex searches of the sort used in this study (see Section 3.2) are not possible. In any case, as Table 3 indicates, BAWE is considerably larger than MICUSP and covers a greater number of disciplines. This made BAWE an obvious choice for this study[4].

3.2 Retrieval of expressions of obligation

A first stage in this investigation was to create queries to retrieve instances of expressions realising the four different orientations of obligation shown in Table 1. The Sketch Engine interface was employed for this purpose. This interface allows users to compose sophisticated queries using corpus query language. The aim in composing such queries was to retrieve as many instances as possible of

[3] The MICUSP interface is accessed at http://micusp.elicorpora.info/
[4] Thus from this point onwards 'proficient student writers' is with reference to their representation in BAWE

the expressions while limiting the retrieval of irrelevant instances. The objective was also to retrieve instances comparable to those of modal verbs, which are tenseless, so past tense and infinitive forms were excluded from searches.

Instances of modal verbs were retrieved by searching for the form in question tagged as a modal verb. Relevant instances of the semi-modal verbs *have to* and *need to*[5] were found by searching for the relevant forms (*have, has*) and the tags relating to present tense uses.

The query procedure for retrieving the main exponents of the other orientations shown in Table 1 was more complicated, however, since more variables had to be taken into account. The first stage used pattern-based searches to retrieve as many relevant forms as possible; such queries did not seek initially to focus on any specific forms but to explore what obligation-related items might occur in the corpus. For example, with *it is* [important] *to*, the initial query sought to retrieve instances with any adjective occurring in this frame. A list of all the adjective types retrieved using this query was then made to find the main adjectives used with obligation meanings in BAWE. These were then included in a new query to ascertain the most frequent of these, which are shown in Table 4.

As can be seen in Table 4, subjective explicit obligation realised by the pattern ***I* [want] X *to*** is highly infrequent in BAWE and on this basis is unlikely to be of use to EAP students in their writing. Indeed, this is unsurprising bearing in mind the features of the pattern and the high risk involved in directly taking

[5] *Have to* and *need to* refer to present tense forms of the two verbs in question. Likewise *be* in *be required/expected to* refers to *am/is/are*.

responsibility for an obligation. On this basis, it was excluded from the study at this stage.

3.3 Sampling – checking obligation meaning

The figures presented in Table 4 should not be taken as indicating obligation frequencies in BAWE since not all instances of the forms concerned realise obligation meanings. Modal verbs are commonly agreed to have more than one meaning (Coates, 1983; Quirk et al., 1985; Palmer, 1990; Huddleston & Pullum, 2002). Both *should* and *must* have 'probability' as well as 'obligation' meanings, which is why labels like 'obligation modals' (Biber et al., 1999; Hyland, 2002) may be misleading. To take *must* as an example, example (1) below shows *must* in its obligation meaning while (2) is an instance of the probability meaning. The underlined items in these two examples show co-textual features that tend to be associated with the respective meanings (Coates, 1983; Hunston, 2000; de Haan, 2012). In (1) an animate subject and an agentive verb are associated with the obligation meaning. In (2) the 'probability' analysis follows from reference to drawing a conclusion, the inanimate subject and the stative verb 'be'.

(1) You *must* also specify a date not less than 21 days from the date of service (3146a)[6]

(2) He concluded that the cathode rays *must* be lots of tiny particles of matter (6091c)

[6] This is the unique BAWE document number given to the assignment which this instance comes from. Full contextual details about the author, discipline area etc. can be accessed through the BAWE spreadsheet, downloadable here: https://www.coventry.ac.uk/research/research-directories/current-projects/2015/british-academic-written-english-corpus-bawe/

Similar issues apply for other forms involved in this study, although the choice is not always between obligation and probability. For this reason, it was decided to take samples of the lines retrieved for each individual form in order to remove those not expressing obligation. Samples of 100 lines were retrieved for the most frequent forms using the 'random sample' function in Sketch Engine (except for forms where total frequency was under 100 in which case all instances were retrieved). The samples were then examined to identify instances expressing obligation. The results are shown in Figure 1. As we can see, for most of the forms, a large majority of instances realise obligation meanings. The major exceptions to this trend are *be expected/ required / supposed to.* The proportions of less frequent forms *ought*, *be supposed to* and *it is essential to* proved to be comparable to those of their more frequent counterparts. Since their patterns of use were also similar, it was decided at this stage to focus on the more frequently occurring forms.

3.4 Classification

Once irrelevant instances were removed from the samples, the remaining instances were classified using Hyland's (2002) functional framework (see Section 2). In the course of this classification, two main adaptations were made to this framework. First of all, Hyland's category of 'Textual Acts' was not found to occur with the forms investigated here. This is unsurprising judging by the examples provided by Hyland, which consist almost entirely of imperatives. This category therefore plays no part in this study.

A second methodological issue relates to the subcategorisation of cognitive acts. As shown in Table 2, Hyland (2002: 2017-18) recognises 3 subcategories of

cognitive acts, *rhetorical, elaborative* and *emphatic*, through which 'readers are initiated into a new domain of argument, led through a line of reasoning, or directed to understand a point in a certain way'. However, he does not explain in detail the distinction between the subcategories, relying mainly on examples to indicate the differences he seeks to draw. Based on the instances retrieved in this study, it was not found possible to maintain a reliable distinction between the *elaborative* and *rhetorical* subcategories. They were therefore combined under the label *cognitive rhetorical*, or CR.

In this study, instances classed as CR are those where the writer seeks to introduce a 'new domain of argument' by expressing the need to consider a specific point or understand a concept in a certain way before proceeding to do so. Typical examples from this study are shown in (3) and (4) below. Instances that realise this function are commonly accompanied by an infinitival purpose clause which explains why the relevant act is necessary, a pattern of argumentation also noted by Van linden & Verstraete (2011) and discussed in more general terms by Lee (2010). Since it is key to the identification of such instances that the promised act actually follows, it was necessary to read the proceeding text to check whether or not this happened.

(3) We *should* however consider the lack of homogeneity regarding religious practice during this period… (0144c)

(4) In order to address this question, *it is* first *necessary to* define standardisation. (3041a)

It is interesting to note here that that while the reader in (3) is directed to carry out a cognitive act of considering, in (4) the imposition is less direct and more in

line with the hypothetical nature of certain acts (Hyland 2002; see Section 2) – while the reader is not expected to 'define' (or explain) the concept in question, the implication is that anyone in this situation would need to define 'standardisation', much in the way that the description of research focus acts does not imply that the reader is thereby committed to replicating the procedure.

CE (cognitive emphatic) instances are those where the expression of obligation is used to draw attention to the importance of a specific point; this is typically achieved by saying that it needs to be noted, recognised or understood. Instances commonly include a verb with a *that*-clause complement which includes the proposition which the writer wishes to draw particular attention to. An example of CE is seen in (5) below. Here the addition of the embedding clause (*we must recognize that*) lays stress on the point being made.

(5) we *must* recognize that many political scientists doubt the novelty and the very existence of this process. (0139d)

Instances were classed as Research Focus (RF) where the expression of obligation has been used to demonstrate the writer's understanding of research methods in their area. This may be to point out the importance of a carrying out a procedure, the necessity of particular settings in the successful achievement of a research aim, or to show understanding of what further research needs to be carried out. An example can be seen in (6) below. We can note here the presence of research-related lexis (e.g. *calculate, variance* and *population*), but also that

the writer explains the necessity of the calculation of the mean in terms of its contribution to the follow-up calculation of the variance.

(6) To calculate the variance of a given population, *it is necessary to* first calculate the mean of the scores.

The final category of obligation uses is 'real world' (RW). Instances classed in this way are those that refer to obligations on entities outside the text and outside the research context, such as reference to laws or making recommendations in conclusions. In (7) the implicit subjective expression *should* is used in the context of giving advice, where the student writer is indicating their understanding of real world implications.

(7) Tasks *should be* allocated according to employees' capabilities (3018b)

The adapted version of Hyland's (2002) classification of functions of directives is shown in Table 5, with examples from this study for each category.

Adopting this classification procedure yielded proportions of each sample which will be compared and discussed in Section 4 below.

4. Findings and discussion

4.1 Quantitative findings relating to expressions of obligation and their functions

Figure 2 shows the proportions of the obligation samples for each form which realise each of the obligation functions. As noted in Section 2, 'cognitive' functions (CR, CE) are seen as representing a greater imposition on the reader than the 'physical' functions (RF, RW) (Hyland 2002). The interest here is in seeing whether the increased imposition (and therefore risk for the writer) is reflected in linguistic choices.

As we can see in Figure 2, the hypothesized association between form and function is mostly borne out by the results, although there are some exceptions. For the higher responsibility modals and semi-modals, instances classed as RW constitute a clear majority, with RF instances constituting the second highest proportion of instances. For these items, instances classed in the 'physical act' category constitute between 78% and 92% of the relevant instances sampled. In contrast, the low responsibility forms, *it is necessary to* and *it is important to*, have a far higher proportion of high risk 'cognitive' instances, with a total of 46% for *necessary* and nearly 70% of instances of *important*. This suggests an overall perception that these lower responsibility introductory *it* expressions are more appropriately used in more risky situations.

The main exceptions to the apparent overall trends are the forms *be expected to* and *be required to*, which are not found at all in instances classed as realising cognitive functions. We have already seen (in Table 4) that these forms are considerably less frequent than the other forms analysed here, suggesting that they are less important as expressions of obligation in student academic writing. What emerges from analysis of instances of these forms, however, is that they are not in competition with the other forms covered here. One is not normally *required* or *expected* to *note/consider/understand* something in student

writing. This finding may be related to the observation that instances involving *be expected/required to* typically involve reports of RW obligations imposed by some absent third party.

(8) All organic livestock farms **are required to** have a written animal health plan, as part of livestock management, which is approved by the Soil Association. (6116h)

In example (8), which comes from an assignment on sheep rearing, the requirement to have the health plan is a legal requirement, determined by the Soil Association. This shows how *be expected/required to* tend to be used in situations where the obligation is not one that the writer could in theory impose. This lack of hypothetical possibility of imposition of obligation is a deciding criterion for Hyland (2002). For this reason, these expressions will not be discussed further.

Another apparent inconsistency in Figure 2 is the relatively high proportion of *must* instances realising cognitive functions (22%). In this regard, it is important to note that Figure 2 presents findings in terms of proportions to facilitate comparison. This does not take account of the fact that modals and semi-modals are overall considerably more frequent than *it is important / necessary to* (see Table 4). In fact, 22% of the sample of *must* extrapolates to a frequency of 878 instances (126 pmw)[7], or more than the total frequency of *it is*

[7] This figure was calculated by multiplying the proportion of instances in the *must* sample realising these meanings (18 of the original 100 lines, 81 of which realised obligation meanings) by the overall frequency of *must* in BAWE (4880). This calculation is based on the questionable assumption that the distribution of meanings in the sample reflects the distribution of meanings in the corpus.

important to (733). Thus, further investigation is needed to explore how proficient student writers use modals and semi-modals with obligation meanings. Just counting these forms tells us nothing about their patterns of use in obligation functions. A more qualitative investigation of their uses can reveal student understandings of the constraints of the language activity they are undertaking. This is the aim of the following section.

4.2 Qualitative investigation of realisations of Hyland's functions

Cognitive Emphatic (CE)

As noted in Section 3, CE instances are those where the writer uses an expression of obligation to draw attention to the importance of a particular point, such as an unexpected result (Swales et al., 1998; Neiderhiser et al., 2016). Although obliging a reader to note something may involve a high level of risk, it is also an important function in student academic writing. This is one way students can demonstrate their understanding of the key issues in their work and their discipline. Student writers therefore have to consider how to mitigate this risk. It is thus unsurprising that where instances of CE are found, proficient student writing shows an awareness of constraints on the way the obligation is expressed.

Table 6 shows the range of uses of these obligation expressions in CE instances. The use of expect objective *it is* [important] *to* examples is as expected, since it allows writers to avoid taking responsibility for the judgement of importance. What is more interesting here is the ways that modals and semi-modals are utilised to draw attention to important points. Four patterns of use were identified for modals and semi-modals. The first of these is in introductory

it structures followed by a passive verb, a structure only found with CE and CR functions but not with RF or RW. This is a noteworthy structure since it allows the writer to suggest the importance of 'noting' the point without saying who should note it. The second use of modals and semi-modals, with a passive construction, helps the writer to show that the activity in question (here, *forecasting of demand*) is important without saying exactly who is responsible for undertaking it. The other patterns of use involve the pronouns *one* and *we* with a 'generic' function (Quirk et al. 1985: 387), which again allow writers to avoid mentioning a specific agent who is obliged.

The overall picture with CE instances, then is that writers are not simply avoiding responsibility for a 'risky' obligation by using an introductory *it* expression. They are also using modals and semi-modals (*must, should, need to, have to*), but in structures that avoid mentioning a specific obliged agent. That is, writers are say that there is an obligation, but avoid saying who it applies to. This can be seen as theoretically allowing them 'deniability' if challenged on whether the obligation applies to the current reader, i.e. their instructor/marker.

Discussing very similar examples to those here, Van linden (2012: 286) draws attention to the phraseology of this 'deontic mental focus construction', pointing out the limited range of verbs that occur after the expression of obligation. Instances of obligation with the CE function are indeed rather conventionalised. It is possible to divide the verbs found into two main semantic sets – cognitive acts such as *note, bear in mind* and communicative acts – *say, mention* and *point out*.

Cognitive Rhetorical

CR instances, like CE, play an important part in successful student academic writing as a strategy for linking ideas together and thereby building arguments while demonstrating subject knowledge. The first example in Table 7 refers to a previously mentioned question, with the student here seeking to persuade the reader that the definition which follows is necessary before a response to the question can be provided. This type of rhetorical device serves to demonstrate disciplinary knowledge as well as audience awareness. Like CE instances, therefore, CR expressions require judicious use, since this is a move that draws attention to what the student is trying to achieve, that is, 'position' their reader (Hyland 2002). The delicate nature of this task is reflected in the choices of structures used to express CR instances. In fact, as Table 7 shows, these are the same structures as those found for CE. Once again, successful student writing avoids mentioning exactly who is obliged through the use of impersonal introductory *it* expressions, passive voice and generic pronouns.

The principal difference between CE and CR instances is the fact that student writers tend to justify the necessity by means of purpose clauses such as those underlined in the examples in Table 7. This is in line with Lee's (2010) observations about the awareness of the more effective student writers in her study of the importance of such justifications.

As with CE, it is noticeable that expressions classified as CR are quite conventionalised. The examples in Table 7 not only show the obligation expressions but also the main types of verbs found. It is possible to group these into sets of similar meanings: 'examining' (*examine*, *analyse*, *look at*, *compare*), 'understanding' (*understand*, *ascertain*, *appreciate*) and 'explaining' (*explain*, *define*, *clarify*). As noted earlier, in the case of the first two sets the immediate

imposition on the reader is more obvious since they are apparently exhorted to engage directly in cognitive activity, while with 'explaining' verbs this is a more indirect process.

Research Focus (RF)

RF is also an important function in student writing, since referring to research procedures allows students display their knowledge of methods used in their discipline. Hyland (2002) argues that it is less risky to oblige a reader to carry out a research-focused act than a 'cognitive act'. Nevertheless, for student writers this still requires some care, if we consider that they are writing for those who are more expert than them.

As we can see, the first four structures in Table 8 are the same as those already mentioned for CR and CE. That is, student writers describing research procedures with these expressions seek to avoid responsibility for a judgement of obligation using introductory *it* expressions, or to obscure the identity of the obliged agent, for example by not specifying who has to make 'adjustments' in the passive example. Similarly to CR instances, there is a tendency for student writers to support or justify the obligation by means of purpose clauses or other ways of presenting it as the result of an argument (see underlined items in the examples).

The two patterns of use not seen with CE or CR instances are shown in the final two rows of Table 8. The first of these is interesting from the point of view of the way the obligation is introduced, since the entity obliged to have a particular characteristic or setting is a 'research variable', that is, a value or instrument. In other words, the true obliged agent, a person carrying out the

research activity, is not mentioned; indeed arguably no true 'action' is referred to, since this is a characteristic. The final pattern of use with RF instances is to point out the obligation on those involved in the discipline more generally, such as *policy makers*; this is not a very common option, however.

In summary, the risk students may feel in referring to obligations related to research procedures seems to be reflected in a general preference for low responsibility structures or various ways of avoiding mentioning the obliged agent. The exception to this pattern is where the obliged agent mentioned is generalised to a group of researchers in the field.

Real World (RW)

The importance of the RW function for student writers is that it is used either for giving real world recommendations based on discussion of matters relating to their field, or for showing knowledge of responsibilities linked to real world entities associated with their discipline. In terms of student writing, the level of risk involved is lower since it is unlikely their current reader is affected by this obligation; an exception to this situation would be tasks where students are asked to take on a role, for example business reports (Nesi & Gardner 2012). This seems to be reflected in a wider range of patterns of use (see Table 9).

In terms of patterns of use already discussed, student writers use introductory *it* expressions to avoid taking responsibility for RW obligations. They also use passive structures and generic pronouns, apparently to avoid specifying an obliged agent. However, *you* tends to be employed instead of *one*, suggesting that the writers see the relationship with their reader as less distant in RW instances. We also note first person singular instances where the

obligation applies directly to the writer. As the example in Table 9 suggests, these involve reflections on future actions the writer feels they should take.

RW instances also involve patterns of use which identify the agent who is obliged (third parties such as *managers* and *firms*). We can here contrast between two different uses. In the first an agent is presented as needing to carry out an action (*firms need to make sure*). In the second use, what is presented as a desirable state of affairs is not an action but an ability on the part of the agent (the 'manager' in Table 9), which is not something they have direct control over. This seems to weaken the force of the obligation. Nevertheless, in both uses, proficient students are taking responsibility for the obligation and saying who needs to carry it out. This potentially risky behaviour in some cases seems to be linked to a role (i.e. of consultant) that the student is taking on in writing a case study in which they are expected to make recommendations (Nathan 2013; Henry 2019). In other cases, the obliged agent is not the current reader so one might say that in judging an obligation the writer is at lower risk (e.g. of contradiction).

The final pattern of use which students employ involves reference to a fact or some other abstract entity needing to have a characteristic (*facts ... should be correct*). This is a similar pattern to the RF one referring to research variables and again avoids mentioning who is directly responsible for ensuring this state of affairs. This seems to present further evidence of the inappropriacy in most cases of implicating any specific agent in an obligation in proficient student writing.

In summary, as might be expected, the lower risk involved in RW obligation is reflected in a wider range of patterns of use, notably in explicit

reference to third party obliged agents. Nevertheless, constraints still seems to operate with respect to how RW obligations are expressed.

4.3 Discussion of findings: possible pedagogical implications

The preceding two sections have indicated which exponents of Halliday & Matthiessen's (2004) orientations occur frequently in student writing and analysed how these expressions of obligation are used. We have seen how they vary in terms of the four different functions that are recognised in this study. This variation reflects the constraints on allowable contributions in relation to obligation in proficient student writing. These expressions tend to be used in ways that help students avoid responsibility for the judgement of obligation and avoid identifying specifically who is obliged. As we have seen, proficient student writers have at their disposal a number of strategies to avoid mentioning this obliged party.

These findings point to the importance of raising student awareness of the situations in which it may be appropriate express obligation, and, in particular, the constraints which may apply when doing so. It has already been noted that CE and CR expressions are quite highly conventionalised. This regularity of expression makes them an obvious choice for pedagogical treatment since they can be presented fairly succinctly. An example of the sort of awareness-raising activity that could be presented to students to raise their awareness of typical CE expressions is shown in Figure 3. This activity based on the DDL approach introduced by Tim Johns (see e.g. Johns 1991a,b), a by-now well-established and effective way of raising awareness (Boulton & Cobb 2017) and uses instances drawn from the BAWE corpus. Similar activities could be

devised for CR and for other functions presented in this study depending on the type of class profile and student written genre that being focused on. Based on the findings and observations of this study, such activities would need to raise student awareness of a number of aspects of the use of expressions of obligation.

It is of course important to focus on the main forms available to express obligation and how they might index different meanings or be associated with different functions. The activity shown in Figure 3 aims to get students to 'notice' (Schmidt 1990) the forms associated with the expression of CE and consider to what extent they might vary. A higher proportion of introductory *it* instances have been included to indicate their higher prevalence in this type of expression. In this case the means of drawing student attention to the forms in question is by means of asking them to complete the expressions, although other ways of encouraging noticing could be considered. EAP students may need to have their attention drawn to the availability of forms beyond modal verbs, and indeed to be shown that modal verbs themselves commonly occur in passive constructions and with introductory *it* when expressing obligation, as in the exercise in Figure 3. In terms of the use of the pattern *it is Adj to* with obligation meanings, students may not be aware of the phraseological constraints that apply, that is, which adjectives can occur and indeed which adjectives do commonly occur. As part of raising awareness it may also be useful to discuss issues regarding the 'strength' of the modal expression and whether or not it is appropriate to use higher value *must* or *necessary/essential*.

The importance of impersonal means of expression has been a focus of this study. However, it is also clear that in certain situations other ways of expressing obligation may be appropriate. It seems helpful to give students the

opportunity to discuss which subjects of active clauses involving modals and semi-modals expressing obligation may be appropriate to use and in which contexts. This could involve consideration of when it might be appropriate to use *you* or refer to agents who are obliged, e.g. when adopting roles such as consultants writing case studies who are expected to give recommendations. It may also be worth considering when it would be appropriate to refer to oneself as under an obligation (e.g. when writing self-reflections).

A final aspect that seems to emerge from this study is that proficient student writers have other ways of weakening the obligation expressed. That is, it is possible to refer to characteristics, such as abilities, that should be possessed rather than actions that should be carried out. This is another area of expression that students could be made aware of.

5. Conclusion

This paper has contributed to our understanding of obligation in student academic writing by investigating the usage of certain expressions of obligation. By doing so, it has indicated some ways in which proficient student writing shows awareness of potential risk in imposing an obligation. Managing levels of imposition involves an awareness of how and when to take or avoid responsibility for a judgement and whether or not to refer to an obliged agent.

There are various ways in which this area of study could be developed. While the focus here has been on variation in terms of the functions obligation expressions can perform, it is important also to consider variation by discipline or genre (or both), particularly considering the BAWE corpus contains texts from 33 disciplines across four different levels of study and 13 genres (Nesi and

Gardner 2012). Hyland (2002) and Neiderhiser et al. (2016) have already indicated the value of such work and this study can be seen as complementary to both of those, but a more integrated approach may be revealing. Such research would usefully focus on key disciplinary student genres, where obligation moves might be found within them, and which functions are realised. It would also be of value to move beyond just those forms which fit into the Hallidayan framework, such the imperative (Neiderhiser et al., 2016), and indeed to consider the identification of indirect recommendations, such as Lee's (2010) category of 'declarative hints' where a form relating to obligation is not used.

In doing so it may be helpful to move beyond the corpus-based approach taken here and undertake qualitative manual analysis of assignments taken from the corpus to identify how writers frame obligations. This approach would allow for the identification of direct and indirect means of expressing obligation. This sort of approach would also benefit from considering student and lecturer perspectives on the appropriacy or otherwise of certain means of expressing obligation. Finally, it would be helpful to ascertain the sorts of problems that learners have, whether this is achieved by consulting (or constructing) an appropriate corpus, through detailed manual analysis of the type carried out by Lee (2010), or by surveying learners on what issues they find most problematic.

References

Biber, D., Johansson, S., Leech, G., Conrad, S., & Finegan, E. (1999). *Longman*

grammar of spoken and written English. Harlow: Longman.

Brown, P. & Levinson, S. (1987) *Politeness: Some Universals in Language Usage.* 2nd ed. Cambridge: CUP.

Boulton, A. & Cobb, T. (2017) 'Corpus use in language learning: A meta-analysis'. *Language Learning,* 67(2): 348-393.

Coates, J. (1983) *The Semantics of the Modal Auxiliaries*. London: Croom Helm.

de Haan, F. (2012) 'The Relevance of Constructions for the Interpretation of Modal Meaning: The Case of Must'. *English Studies*, 93(6): 700-728.

Depraetere, I. & Reed, S. (2006) 'Mood and Modality in English.' In Aarts, B. & McMahon, A. (eds.) *The handbook of English linguistics.* Malden, MA: Blackwell, 269-90.

Durrant, P. (2016) 'To what extent is the Academic Vocabulary List relevant to university student writing?' *English for Specific Purposes*, 43: 49-61.

Francis, G., Hunston, S. & Manning, E. (1998) *Collins COBUILD grammar patterns 2: nouns and adjectives*. London: HarperCollins.

Gabrielatos, C. (2010) *A corpus-based examination of English if-conditionals through the lens of modality: Nature and types*. Unpublished PhD thesis, Lancaster University.

Giltrow, J. (2005) 'Modern conscience: Modalities of obligation in research genres'. *Text-Interdisciplinary Journal for the Study of Discourse* 25(2): 171-199.

Groom, N. (2005) 'Pattern and meaning across genres and disciplines: an exploratory study.' *Journal of English for Academic Purposes* 4(3): 257-277.

Halliday, M. and Matthiessen, C. (2004) *An Introduction to Functional Grammar*.

3rd ed. London: Edward Arnold.

Henry, J. (2019) 'From doing to being: Process type as indication of purpose in academic business reports'. *Journal of English for Academic Purposes,* 42.

Hewings, M. & Hewings, A. (2002) ''It is interesting to note…': a comparative study of anticipatory 'it' in student and published writing.' *English for Specific Purposes* 21: 367-383.

Hoye, L. (1997) *Adverbs and modality in English*. London: Longman.

Huddleston, R. & Pullum, G.K. (2002) *The Cambridge grammar of the English language.* Cambridge: CUP.

Hunston, S. (2000) 'Phraseology and the modal verb: a study of pattern and meaning.' In C. Heffer and H. Sauntson (eds.) *Words in context: a tribute to John Sinclair on his retirement.* University of Birmingham CD-ROM.

Hyland, K. (2002) 'Directives: argument and engagement in academic writing'. *Applied Linguistics* 23(2): 215-239.

Johns, T. (1991a) '"Should you be persuaded": Two samples of data-driven learning materials. *ELR Journal* 4: 1-16.

Johns, T. (1991b) 'From printout to handout: Grammar and vocabulary teaching in the context of data-driven learning'. *ELR Journal* 4: 27-45.

Lee, S.H. (2010) 'Command strategies for balancing respect and authority in undergraduate expository essays'. *Journal of English for Academic Purposes,* 9(1): 61-75.

Levinson, S. (1979) 'Activity types and language'. *Linguistics*, 17: 365-399.

Lewis, D. (2015) 'A comparable-corpus based approach to the expression of obligation across English and French'. *Nordic Journal of English Studies* 14(1): 152-173.

Lyons, J. (1977) *Semantics*. Cambridge: Cambridge University Press.

Nathan, P. (2013) 'Academic writing in the business school: The genre of the business case report'. *Journal of English for Academic Purposes*, 12: 57-68.

Neiderhiser, J. A., Kelley, P., Kennedy, K.M., Swales, J.M. & Vergaro, C. (2014). 'Notice the Similarities between the Two Sets…': Imperative Usage in a Corpus of Upper-Level Student Papers. *Applied Linguistics 37*(2): 198-218.

Nesi, H. & Gardner, S. (2012) *Genres across the disciplines: Student writing in higher education*. Cambridge: Cambridge University Press.

Nuyts, J. (2005) 'The modal confusion: On terminology and the concepts behind it.' In A. Klinge & H. Müller (eds.) *Modality: studies in form and function.* London: Equinox Publishing, 1-38.

Palmer, (1990) *Modality and the English modals.* Longman.

Perkins, M. (1983) *Modal expressions in English.* London: Francis Pinter.

Quirk, R., Greenbaum, S., Leech, G., & Svartvik, J. (1985) *A comprehensive grammar of the English language*. London: Longman.

Römer, U. (2012) 'Corpora and teaching academic writing: Exploring the pedagogical potential of MICUSP'. *Input, process and product. Developments in teaching and language corpora*, pp.70-82.

Schmidt, R. (1990) 'The role of consciousness in second language learning'. *Applied Linguistics*, 11(2): 129-158.

Swales, J.M., Ahmad, U.K., Chang, Y., Chavez, D., Dressen, D. & Seymour, R. (1998) 'Consider this: The role of imperatives in scholarly writing'. *Applied Linguistics,* 19(1): 97-121.

Thompson, G. (2001). 'Interaction in academic writing: Learning to argue with the reader'. *Applied Linguistics,* 22(1): 58-78.

van Linden, A. (2012) *Modal adjectives: English deontic and evaluative constructions in diachrony and synchrony*. Vol. 75. Berlin: Walter de Gruyter.

van Linden, A. & Verstraete, J-C. (2011) 'Revisiting deontic modality and related categories: A conceptual map based on the study of English model adjectives'. *Journal of Pragmatics*, 43: 150-163.

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Author statement

Benet Vincent as sole author was responsible for Conceptualization, Methodology, Data curation, Writing and Editing

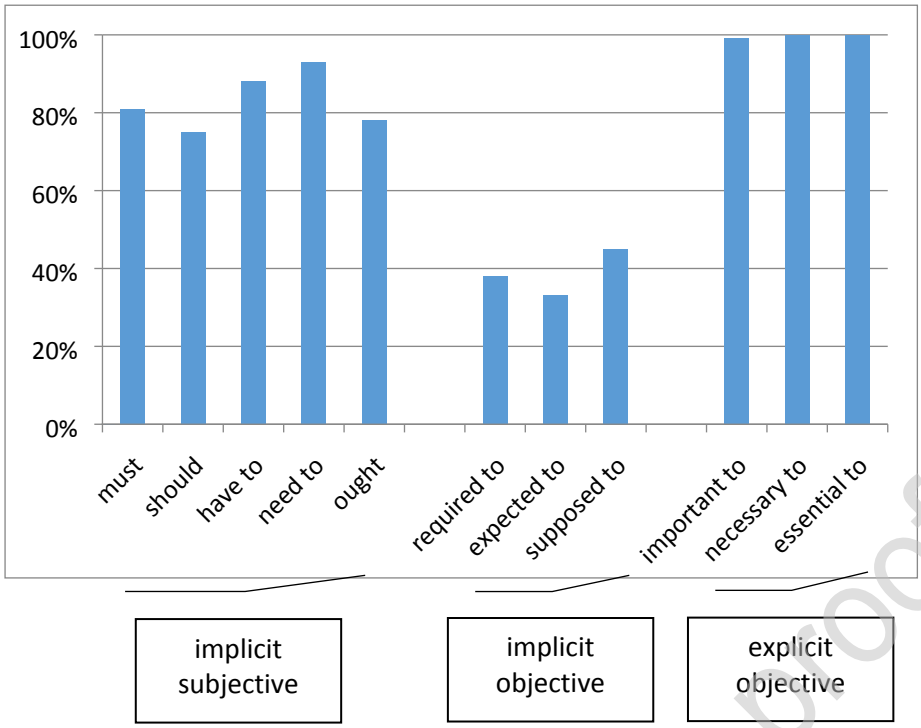

Figure 1: Proportions of samples of main exponents obligation which express obligation (divided according to orientation).

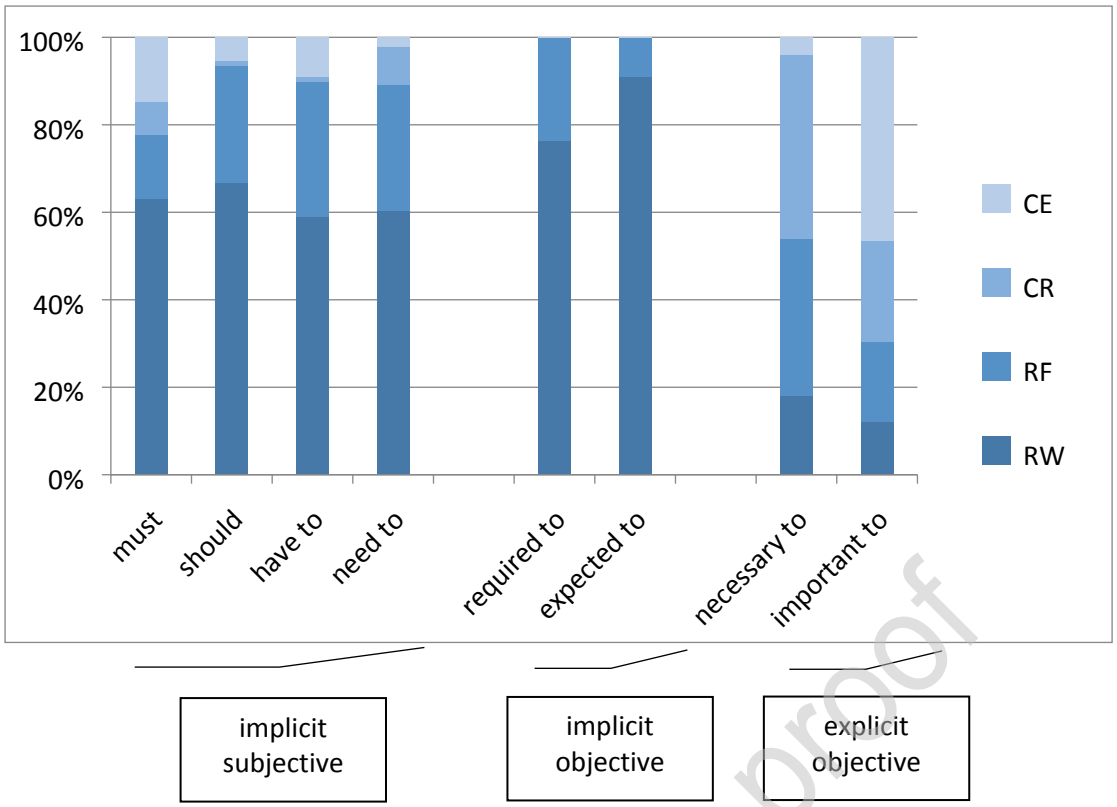

Figure 2: Proportions of filtered samples of each obligation form (grouped by orientation) realising each function

Key: CR = 'cognitive rhetorical'; CE = 'cognitive emphatic'; RF = 'research focus'; RW = 'real world'

It is important to note that EGM states nothing about causality.
However, it is important to remember that the popular movement did not turn towards Bolshevism
It must be noted that the participants were clearly informed that they were paid
However it must be recognised that the system is far from perfect
It should be noted that the data in Figure 4 was taken at the same location
One must note that the result of Hofstede's research does not represent
However we must remember that some services are not usable without cookies.

Look at the examples above, which are all taken from student assignments, and complete the following tasks:

a. Complete the expressions and consider the questions

It is _____ *that*	What other adjectives could be used instead of *important*?
It must/should _____ *that*	Is *must* or *should* better here? Why?
We/one _____ *that*	Would it be OK to use *you* here? Why/not?

b. Three verbs are included, *note, remember* and *recognise*. Can you think of any other verbs that might be used?

c. When would you use this expression?

Figure 3: DDL awareness-raising activity illustrating the use of CE expressions based on instances drawn from the BAWE corpus

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	Subjective		Objective	
	explicit	**implicit**	**implicit**	**explicit**
Examples	I *want* John *to* go	John *should* go	John*'s supposed to* go	*It's important to* go*
Other exponents	*order* *urge*	*must* *ought to* *have to* *need to*	*required* *expected*	*necessary* *advisable* *essential*

Table 1: Hallidayan framework for expression of obligation (adapted from Halliday and Matthiessen 2004: 620)

* Originally: *It's expected that* John goes

Textual Acts	Internal reference	*see section 1*
	External reference	*see Smith, 1990*
Physical Acts	Research focus	*the temperature must be set at...*
	Real-world focus	*you should ask your teacher*
Cognitive Acts	Rhetorical purpose	*consider; suppose, let's examine*
	Elaborative purpose	*let X = b; this should be seen as*
	Emphatic purpose	*it should be noted that; remember*

Table 2: Hyland's (2002:218) functional categorisation of directives with his examples

	Assignments	Words	Disciplines
MICUSP	830	2.6 million	16
BAWE	2700	6.7 million	33

Table 3: BAWE and MICUSP - compositional information.

Orientation	Pattern / Form	Exponents in BAWE (frequency)	Overall frequency (pmw)
subjective explicit	***I* [want] X *to***	*want* (11), *expect* (4), *advise* (1), *ask* (1), *urge* (1)	18 (2.6)
subjective implicit	**[modal/semi-modal]**	*should* (7913), *must* (4880), *need to* (2020), *have to* (1719), *ought* (184)	16716 (2399.1)
objective implicit	***am/is/are* [supposed] *to***	*required* (235), *expected* (203), *supposed* (98), *obliged* (19), *advised* (17), *obligated* (7)	579 (83.1)
objective explicit	***it is* [important] *to***	*important* (733), *necessary* (270), *essential* (67), crucial (39), *vital* (33), *imperative* (15), *advisable* (9)	1166 (167.3)

Table 4: Frequencies of patterns and main exponents for each orientation retrieved from the BAWE corpus (pmw = normalised frequency per million words)

Category	Subcategory (function)	Example
Physical Acts	Real World (RW)	*Everyone must have a chance to achieve success*
	Research Focus (RF)	*On examination, it is important to take notice of any additional signs that might point towards…*
Cognitive Acts	Rhetorical (CR)	*To discuss the security flaws of WEP system, we first need to understand the way it was supposed to work* [explanation follows]
	Emphatic (CE)	*it is necessary to remember that a significant minority of noble families did still participate in …*

Table 5: Adaptation of Hyland's (2002) functional classification used in this study

pattern of use	Example
***It is* [important] + to-infinitive**	*It is* also *important to* mention here that not all alcohol abusers are being treated for the problem of alcohol addiction whilst in hospital (3032h)
***It* + modal/semi-modal + passive**	*it should be* noted that the latter time limits are non-binding[1] (0069e)
modal/semi-modal + passive	Forecasting of demand *must* also be taken into account… (3121b)
***one* + modal/semi-modal**	one *has to* acknowledge the fact that a shock on inputs has a permanent effect on growth (0092a)
***we* + modal / semi-modal**	we *must* recognize that many political scientists doubt the novelty and the very existence of this process (0139d)

Table 6: range of patterns of use of obligation expressions realising CE functions

[1] The expression *it should/must be V-ed that* alone accounts for 235 instances (33.7 pmw) based on search for any verb, as shown at this link: http://ske.li/shouldmust_be_v_that

Pattern of use	Example
***It is* [important] + to-infinitive**	In order to address this question, *it is* first *necessary to* define standardisation (3041a)
***It* + modal/semi-modal + passive**	*It needs to be* explained why men were also tried and found guilty (0040b)
modal/semi-modal + passive	In order to investigate the possibility the topic *needs to be* examined (3125e)
***one* + modal/semi-modal**	To fully understand and manage risk one *must* first understand what underpins risk, uncertainty (0169e)
***we* + modal/semi-modal**	We *should* however consider the lack of homogeneity regarding religious practice during this period… (0144c)

Table 7: range of patterns of use of obligation expressions realising CR functions

Pattern of use	Example
***it is* [important] + to-infinitive**	To calculate the variance of a given population, *it is necessary to* first calculate the mean of the scores (0055a)
modal/semi-modal + passive	When placing circles on a sampling grid some adjustments *have to* be made (0228b)
***one* + modal/semi-modal**	To construct an argument for Q, one *must* prove that Q is true in order for P to be true (3147j)
***we* + modal/semi-modal**	As a result, we *have to* use another way to measure responsiveness (6008i)
[research variable] + modal/semi-modal + [characteristic]	If necessary, the value of AQL *should* take into account safety aspects. (6150d)
[researcher] + modal/semi-modal + [research action]	policymaking and its analysis is hard and policy makers *must* take everything into account when making decisions (0202i)

Table 8: range of patterns of use of obligation expressions in RF functions

Patterns of use	Example
***It is* [important] + to-infinitive**	Therefore, *it is necessary to* market the hotel via traditional and electronic channels (3043a)
modal/semi-modal + passive	Tasks *should be* allocated according to employees' capabilities (3018b)
***we* + modal/semi-modal**	Having demolished the current utopia with the weapons of realism, we still *need to* build a new utopia of our own (0195b)
***one/you* + modal/semi-modal**	You *must* also specify a date not less than 21 days from the date of service of the notice (3146a)
***I* + modal/semi-modal**	I *need to* take in consideration the challenging factors that characterize my young students (3128b)
[entity] + modal/semi-modal + [characteristic]	The manager *has to* be able to handle the tension between an individual's ability and … (0278b)
[entity] + modal/semi-modal + [activity]	monopoly firms *need to* make sure that their consumers remain loyal to them (0399a)
[inanimate/abstract entity] + modal/semi-modal + [characteristic]	Facts that are used *should* be correct and avoid making statements that go beyond the facts and might therefore be challenged (3059a)

Table 9: Range of patterns of use of obligation expressions in RW functions